ABSTRACT OF THE INVENTION

A software monitor runs during the simulation of a digital design to detect and report event combinations to a database for test coverage analysis. The monitor is a grid that includes n ordered axis declarations 72 that each correspond to a functional attribute and list at least two valid functional states, logic expressions 78 that test for the functional states and set axis variables, and a grid declaration 80 that converts the axis variables to a unique linear index value corresponding to the cross-product of the achieved functional states and records hits. The linear index is calculated by multiplying the integer value of each axis variable (except the nth axis variable) by the product of the sizes of each higher-order axis than the axis to which said axis variable corresponds, summing the results, and adding the integer value of the nth said axis variable.